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10/585,067

06/29/2006

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EXAMINER

BUIE-HATCHER, NICOLE M

ART UNIT

PAPER NUMBER

1767

NOTIFICATION DATE

DELIVERY MODE

06/10/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/585,067             | TANAKA ET AL.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | NICOLE M. BUIE-HATCHER | 1767                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 March 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8,9,11,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8,9,11,16 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### ***Response to Amendment***

The amendment filed 03/09/2011 has been entered. **Claims 8, 9, 11,16, and 17** remain pending.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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**Claims 8, 9, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Amin et al. (US 5,461,107) in view of Fujimura et al. (US 2003/0228249 A1).

**Regarding claims 8 and 9**, Amin et al. discloses a perfluoroelastomer composition mixed with a non-fibrillating fluorocarbon particulate polymer which is not an inorganic filler (C3/L31-41). The non-fibrillating fluorocarbon particulate polymer may be a low molecular weight polytetrafluoroethylene homopolymer, a copolymer of tetrafluoroethylene and at least one of hexafluoropropylene or perfluoroalkyl vinyl ether which are both polymers and are organic (C5/L39-55). Furthermore, in Example 1, the perfluoroelastomer is blended with TEFLON ® PA, TEFLON ® FEP, MP 1100 which are all organic polymers. The fluorinated graphite is optional. The elastomeric composition may also include one or more additives (C5/L58-65). Amin et al. is concerned with reduced coefficients of friction of the seal prepared from the perfluoroelastomer composition (C3/L19-23).

However, Amin et al. does not disclose a crystalline carbon allotrope as an additive. Fujimura et al. teaches a fluoroelastomer consisting of ultradispersed diamond particles which is used for sealing (UDD) [0336]. The average particle size of the diamond particles are 4.2 nm or less [0002]. Amin et al. and Fujimura et al. are analogous art concerned with the same field of endeavor, namely perfluoropolymers concerned with decrease in the friction of coefficient. It would have been obvious to one of ordinary skill in the art at the time of invention to substitute the additional additive of Amin et al. with the ultradispersed diamond particles per the teachings of Fujimura et al., and the motivation to do so would have been as Fujimura et al. suggests decreasing the friction coefficient of a perfluoro polymer or poly-fluoro elastic material [0336] and fluorine rubbers as well as increase tensile strength [0332]. Since other additives are

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optional, the sealing material does not contain an inorganic filler other than the crystalline carbon allotrope.

**Regarding claim 11**, Amin et al. does not disclose the sealing material is for a semiconductor manufacturing equipment. The recitation of a new intended use for an obvious product does not make a claim to that obvious product patentable.

**Claim 16** rejected under 35 U.S.C. 103(a) as being unpatentable over Amin et al. (US 5,461,107) in view of Fujimura et al. (US 2003/0228249 A1).

**Regarding claim 16**, Amin et al. discloses a perfluoroelastomer composition mixed with a non-fibrillating fluorocarbon particulate polymer which is not an inorganic filler (C3/L31-41). The non-fibrillating fluorocarbon particulate polymer may be a low molecular weight polytetrafluoroethylene homopolymer, a copolymer of tetrafluoroethylene and at least one of hexafluoropropylene or perfluoroalkyl vinyl ether which are both polymers and are organic (C5/L39-55). Furthermore, in Example 1, the perfluoroelastomer is blended with TEFLON ® PA, TEFLON ® FEP, MP 1100 which are all organic polymers. The fluorinated graphite is optional. The elastomeric composition may also include one or more additives (C5/L58-65). Amin et al. is concerned with reduced coefficients of friction of the seal prepared from the perfluoroelastomer composition (C3/L19-23).

However, Amin et al. does not disclose a crystalline carbon allotrope as an additive. Fujimura et al. teaches a fluoroelastomer consisting of ultradispersed diamond particles which is used for sealing (UDD) [0336]. The average particle size of the diamond particles are 4.2 nm or less [0002]. Amin et al. and Fujimura et al. are analogous art concerned with the same field of

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endeavor, namely perfluoropolymers concerned with decrease in the friction of coefficient. It would have been obvious to one of ordinary skill in the art at the time of invention to substitute the additional additive of Amin et al. with the ultradispersed diamond particles per the teachings of Fujimura et al., and the motivation to do so would have been as Fujimura et al. suggests decreasing the friction coefficient of a perfluoro polymer or poly-fluoro elastic material [0336] and fluorine rubbers as well as increase tensile strength [0332]. Since other additives are optional, the sealing material does not contain an inorganic filler other than the crystalline carbon allotrope.

**Claim 17** rejected under 35 U.S.C. 103(a) as being unpatentable over Amin et al. (US 5,461,107) in view of Fujimura et al. (US 2003/0228249 A1).

**Regarding claim 17**, Amin et al. discloses a perfluoroelastomer composition mixed with a non-fibrillating fluorocarbon particulate polymer which is not an inorganic filler (C3/L31-41). The non-fibrillating fluorocarbon particulate polymer may be a low molecular weight polytetrafluoroethylene homopolymer, a copolymer of tetrafluoroethylene and at least one of hexafluoropropylene or perfluoroalkyl vinyl ether which are both polymers and are organic (C5/L39-55). The fluorinated graphite is optional. The elastomeric composition may also include one or more additives (C5/L58-65). Amin et al. is concerned with reduced coefficients of friction of the seal prepared from the perfluoroelastomer composition (C3/L19-23).

However, Amin et al. does not disclose a crystalline carbon allotrope as an additive. Fujimura et al. teaches a fluoroelastomer consisting of ultradispersed diamond particles which is used for sealing (UDD) [0336]. The average particle size of the diamond particles are 4.2 nm or

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less [0002]. Amin et al. and Fujimura et al. are analogous art concerned with the same field of endeavor, namely perfluoropolymers concerned with decrease in the friction of coefficient. It would have been obvious to one of ordinary skill in the art at the time of invention to substitute the additive of Amin et al. with the ultradispersed diamond particles per the teachings of Fujimura et al., and the motivation to do so would have been as Fujimura et al. suggests decreasing the friction coefficient of a perfluoro polymer or poly-fluoro elastic material [0336] and fluorine rubbers as well as increase tensile strength [0332].

### ***Response to Arguments***

Applicant's arguments filed 03/09/2011 have been fully considered but they are not persuasive. The following comment(s) apply:

A) The previous objection of claim 16 has been withdrawn in light of Applicant's amendment.

B) Applicant's argument that Amin et al. discloses an elastomeric composition comprising a mixture or blend of a perfluoroelastomer and a non-fibrillating particulate fluorinated graphite (page 4) is not persuasive. As shown above in claims 8, 16, and 17, Amin et al. discloses a perfluoroelastomer composition mixed with a non-fibrillating fluorocarbon particulate polymer (C3/L31-41). As shown above in the said claims, the fluorinated graphite is an optional component. Furthermore, in Example 1, the perfluoroelastomer is blended with TEFLON ® PA, TEFLON ® FEP, MP 1100 which are all organic polymers, not inorganic fillers. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft*

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*Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989).

Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). See MPEP 2123.

C) Applicant's argument that Amin et al. does not disclose diamond, fullerene, or carbon nanotube (page 4) is not persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is Amin et al. in view of Fujimura et al. which teach the diamond as shown above in the instant claims.

D) In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references (page 5), the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, Amin et al. and Fujimura et al. are analogous art concerned with the same field of endeavor, namely perfluoropolymers concerned with decrease in the friction coefficient. Therefore, one of ordinary skill in the art at the time of invention would use the diamond particles per the teachings of Fujimura et al. in the composition of Amin et al. in



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order to decreasing the friction coefficient of a perfluoropolymer or poly-fluoroelastic material which are both used in the composition of Amin et al.

E) Applicant's argument that Amin et al. does not provide any incentive for one of ordinary skill to substitute the non-fibrillating fluorocarbon particulate polymer of Amin et al. with completely different inorganic UDD material of Fujimara et al. (page 5). Applicant has misstated the above rejection of Amin et al. in view of Fujimara et al. It is not the non-fibrillating fluorocarbon particulate polymer which is being substituted. It is the additional additives which may be added to the composition in addition to the perfluoroelastomer and non-fibrillating fluorocarbon particulate polymer.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

*Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE M. BUIE-HATCHER whose telephone number is (571)270-3879. The examiner can normally be reached on Monday-Thursday with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. M. B./  
Examiner, Art Unit 1767  
5/24/2011

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1767